

1. A network paging system comprising:

- (a) home agent means;
- (b) Internet IP means;
- (c) network paging protocol means;
- 5 (d) wireless device means;

wherein

said home agent means communicates with said wireless  
device means via said Internet means under  
supervision of said network paging protocol means;  
10 and

said Internet IP means further comprises one or more  
Main Access Routers, Routers, and/or Base Station  
Routers.

2. The network paging system of Claim 1 wherein said network paging protocol means further comprises:

(a) MN Paged triggering means;

(b) New Paging Area triggering means;

5 (c) New Paging Mode triggering means;

(d) Dormant MN Reachable triggering means; and

(e) Dormant MN Not Reachable triggering means;

wherein

10 said triggering means augment Mobile IP communication protocols to notify said MN and/or an Access Router (AR) based on the network availability and status of said MN.

15 3. The network paging system of Claim 1 wherein said network paging protocol means is implemented via an Application Programming Interface (API).

4. The network paging system of Claim 2 wherein said triggering means is implemented via an Application Programming Interface (API).

20 5. The network paging system of Claim 1 wherein said home agent means is also a wireless device means.

6. The network paging system of Claim 1 wherein said network paging protocol means is distributed in software operating on main access routers, routers, and base station routers.

5 7. The network paging system of Claim 1 wherein said communication occurs over the Internet.

8. The network paging system of Claim 1 wherein one or more components of said system is implemented on a personal computer (PC).

10 9. The network paging system of Claim 1 wherein one or more components of said system is implemented on a wireless radio transceiver.

15 10. The network paging system of Claim 1 wherein said wireless device communicates to an Access Router (AR) via an Access Point (AP).

11. A network paging method comprising:

(1) asynchronously triggering a Mobile Node (MN) when a paging request is received via a MN Paged API means;

5 (2) asynchronously triggering a Mobile Node (MN) when said MN finds it has changed Layer-2 paging area via a New Paging Area API means;

10 (3) asynchronously triggering a Mobile Node (MN) when said MN changes mode via a New Paging Mode API means;

(4) asynchronously triggering an Access Router (AR) when a Mobile Node (MN) Layer-2 state changes from "unreachable" to "reachable" via a Dormant MN Reachable API means; and

15 (5) asynchronously triggering an Access Router (AR) when a Mobile Node (MN) Layer-2 state changes from "reachable" to "unreachable" via a Dormant MN Not Reachable API means;

wherein

20 said triggering is via communication over an Internet IP means;

said communication occurs between a home agent means  
and a wireless device means; and

said communication is under supervision of a network  
paging protocol means.

5 12. The network paging method of Claim 11 wherein said  
network paging protocol means further comprises:

(a) Layer-3 Network Address structures;

(b) Layer-2 Network Address structures;

(c) Paging Area ID structures; and

10 (d) Layer-2 API Error Status structures;

wherein

said structures augment Mobile IP communication  
protocols to affect network paging functionality  
between said home agent means and said wireless  
15 device means.

13. The network paging method of Claim 11 wherein said  
network paging protocol means is implemented via an  
Application Programming Interface (API).

20 14. The network paging method of Claim 11 wherein said home  
agent means is also a wireless device means.

15. The network paging method of Claim 11 wherein said network paging protocol means is distributed in software operating on main access routers, routers, and base station routers.

5 16. The network paging method of Claim 11 wherein said communication occurs over the Internet.

17. The network paging method of Claim 11 wherein one or more steps of said method is implemented on a personal computer (PC).

10 18. The network paging method of Claim 11 wherein one or more steps of said method is implemented on a wireless radio transceiver.

15 19. The network paging method of Claim 11 wherein one or more steps of said method is implemented on a wireless radio transceiver.

20. The network paging method of Claim 11 wherein said wireless device communicates to an Access Router (AR) via an Access Point (AP).

21. A computer usable medium having computer-readable program code means providing network paging functionality, said computer-readable program means comprising:

- 5 (1) computer program code means for asynchronously triggering a Mobile Node (MN) when a paging request is received via a MN Paged API means;
- (2) computer program code means for asynchronously triggering a Mobile Node (MN) when said MN finds  
10 it has changed Layer-2 paging area via a New Paging Area API means;
- (3) computer program code means for asynchronously triggering a Mobile Node (MN) when said MN changes mode via a New Paging Mode API means;
- 15 (4) computer program code means for asynchronously triggering an Access Router (AR) when a Mobile Node (MN) Layer-2 state changes from "unreachable" to "reachable" via a Dormant MN Reachable API means; and
- 20 (5) computer program code means for asynchronously triggering an Access Router (AR) when a Mobile Node (MN) Layer-2 state changes from "reachable"

to "unreachable" via a Dormant MN Not Reachable  
API means;

wherein

said triggering is via communication over an Internet  
5 IP means;

said communication occurs between a home agent means  
and a wireless device means; and

said communication is under supervision of a network  
paging protocol means.

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22. The computer usable medium of Claim 21 wherein said network paging protocol means further comprises:

- (a) Layer-3 Network Address structures;
- (b) Layer-2 Network Address structures;
- (c) Paging Area ID structures; and
- (d) Layer-2 API Error Status structures;

wherein

said structures augment Mobile IP communication protocols to affect network paging functionality between said home agent means and said wireless device means.

23. The computer usable medium of Claim 21 wherein said network paging protocol means is implemented via an Application Programming Interface (API).

24. The computer usable medium of Claim 21 wherein said home agent means is also a wireless device means.

25. The computer usable medium of Claim 21 wherein said network paging protocol means is distributed in software operating on main access routers, routers, and base station routers.

26. The computer usable medium of Claim 21 wherein said communication occurs over the Internet.

27. The computer usable medium of Claim 21 wherein said medium is compatible with a personal computer (PC).

5 28. The computer usable medium of Claim 21 wherein said medium is compatible with a wireless radio transceiver.

29. The computer usable medium of Claim 21 wherein said triggering is implemented on a wireless radio transceiver.

10 30. The computer usable medium of Claim 21 wherein said wireless device communicates to an Access Router (AR) via an Access Point (AP).

31. A network paging encoded propagated signal data stream constructed using

- (1) MN Paged Trigger signaling structure means;
- (2) New Paging Area Trigger signaling structure means;
- 5 (3) New Paging Mode Trigger signaling structure means;
- (4) Dormant MN Reachable Trigger signaling structure means; and/or
- (5) Dormant MN Not Reachable Trigger signaling structure means;

10 wherein

said signal is at least partially communicated via wireless communication means; and

said encoded signal communicates between two nodes in a distributed network over the Internet.